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p. 87a

Wooden Bridge over the Indus, near LÉ.

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133X 491 ungovernable fury. Yet even in these inaccessible places has daring and ingenious man triumphed over opposing nature. The yawning abyss is spanned by frail rope bridges, and the narrow ledges of rock are connected by ladders to form a giddy pathway overhanging the seething caldron below. At Makpon-i-Shang-Rong, 4,500 feet, the Indus cuts the Trans-Himálayan chain of mountains by a bold and sudden sweep round to the southward, where it receives the waters of the Gilgit river, a mighty stream, perhaps not inferior to any one of the mountain tributaries. From Skardo to Rongdo the distance is 40 miles, and the fall of the river 800 feet, or 20 feet per mile. From Rongdo to the Shang-Rong the distance is 75 miles, and the fall 1,700 feet, or 22·6 feet per mile.

From the junction of the Gilgit river to Attock, 1,000 feet above the sea-level, the course of the Indus is to the south-west. The distance is 300 miles, and the fall of the river 3,500 feet, or 11·6 feet per mile. This part of its course is but little known; but even at Ohind, 15 miles above Attock, I found the current of the Indus much more rapid than that of any other river of the Panjáb.

From its source to Rânak, the Indus is a broad and fordable stream, rolling its sluggish waters through open grassy plains. Its general width is about 250 feet. From Rânak to the junction of the Zanskar river, the stream is a brawling rapid from 100 to 150 feet broad; and thence to the confluence of the Shayok it is a furious torrent, raving from side to side of a narrow ravine. At the Khallach bridge, the channel is only 50 feet wide below and 60 feet above. In the winter the lower part of the Indus is frequently frozen over,

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the Chang-Chhen-mo. This part of the course is now quite inaccessible, owing to the accumulated mass of ice and snow. The high road from Lé to Yarkand formerly ascended the bed of the Khundan or Shayok river the whole way to its source in the Kárákoram mountains; but since the obstruction of the channel, the road now takes a more westerly direction up the Nubra river, and then crosses a lofty pass to Sassar on the Khundan. At this point it again leaves the Khundan, on account of the upper glaciers seen by Dr. Thomson, and proceeds over a rugged and elevated tract to the head-waters of the river.

In these cold and lofty regions, almost every ravine is filled with a glacier, which, except during a very warm summer, never moves, but is bound to the rocks every night by the icy chains of frost. A glacier is melted on its under surface by the higher temperature of the soil, and on its upper surface by the thawing of the snow under the direct rays of the sun. The heated stones that lie on the top form hollows and clefts that admit the external air, and little rills of water trickle over the sides in all directions. The glacier is thus furrowed by holes, penetrated by cracks, and undermined below, until it becomes narrower than the ravine which contains it. It then descends by its own weight, and is either rent to pieces by unequal pressure, or checked by some opposing obstacle. In a very warm and dry summer the glaciers in the lateral ravines of the Khundan would be so much diminished by melting and evaporation, that they would be impelled onwards by their own gravity right across the channel of the river. This I suppose to have been the case towards the end of September 1826, from which time the channel of the Khundan river has

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warm myself by walking, and I distanced the boat, although it was paddled by two men. I do not therefore estimate the velocity of the current at more than 1½ mile per hour, and I believe that it is considerably less.

At Islamabad, the breadth of the stream is 120 feet, with a maximum depth of 12 feet 3 inches. It is spanned by a log bridge, 118 feet in length, with two openings. At Bij Bihâra, below the junction of the Lidar river, it is spanned by a bridge 250 feet in length, with four openings. Between these points the water is beautifully clear, and the bed of the river is generally sandy, and ripple-marked, and covered with shells and broken pottery. In a few places the bottom is stony, but the stones are all small and rounded. At Pampur the Behat is spanned by another log bridge, 325 feet in length, with five openings; but the water is slightly muddy, and the bed of the river can no longer be seen. Below Pampur, and opposite Panthasok, the abutments and two piers of a stone bridge are just visible above the water. In its course through the city of Srinagar, the channel of the river is narrowed to 250, and even to 200 feet, with a varying depth of from six to twelve feet. The stream is very sluggish, and the surface of the water in many places is covered with the green slime common to stagnant pools. In December, Moorcroft found the river 210 feet broad, with a mean depth of nine feet, and a velocity of 2,400 feet per hour, or of 0·6666 feet per second; which gives a discharge of 1,150 cubic feet per second.

At Sambhal, or Sambhalpur, below the junction of the Sindh river, the Behat is spanned by another bridge, 340 feet long, with five openings. The average depth of the water is about fourteen feet at the same place. On

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133Y 491 the 16th December, Trebeck* found the depth of water from one to three fathoms. Assuming twelve feet as the average depth in December, and the rate of the current at 2,400 feet per hour (the same as at Srinagar), the winter discharge of the united streams of the Behat and Sindh rivers will be 2,480 cubic feet. At Barâhmula† the discharge is most probably not more, as the waters of the Loláb river may be supposed to supply the great loss by evaporation on the Wular lake.

133X From Barâhmula to Mozafarabad, the Behat pursues an easterly course for 100 miles. The total fall between these places is 3,800 feet, or thirty feet per mile; and the character of the river entirely changes from a placid and sluggish stream to a raving torrent. Below Tattamula, and about sixteen miles from Barâhmula, the rocky cliffs rise almost perpendicularly from the river to a height of 300 and 400 feet; and in some places that I noticed, the bare steep cliffs were not less than 800 feet above the stream.

As the height of the Behat, near Tattamula, is about 5,000 feet above the sea, the whole of Kashmir must have been submerged by the waters of the river, before the wearing down of these cliffs.‡ The level of the Kashmirian lake would have been about 5,800 feet above the sea, and from 50 to 100 feet above the Karewahs, or isolated alluvial flats now remaining in Kashmir.

* Moorcroft's Travels, II. p. 220.

778 † This name is properly *Varâha-mula*, the Boar Avatar's spring. The *Varâha Ganga* is now a dry hole, fifty feet long, thirty feet broad, and twenty feet deep. The spring has become dry, but the place is still esteemed holy.

‡ As Tattamula (*Sanskrit*, Tapta-mula), the "hot spring," may indicate volcanic action, the immediate cause of the bursting of the lake may have been the sudden rending of the rock by an earthquake.

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4,000 cubic feet, or just double that at Tandi, which is half-way between the source and the town of Káshtwár. Below the town it receives from the north the large river of Wardwan, about sixty miles in length, by which the discharge is probably increased to 4,500 cubic feet. 133X

At Koksar, 10,000 feet above the sea, which is the highest inhabited village on the Chandra river, a suspension-bridge of twisted birchen ropes is annually constructed. A second suspension-bridge of the same kind formerly spanned the mouth of the Bhaga river at Tandi, but this was carried away some time after Dr. Gerard's visit in 1830. In 1839 I saw the ropes lying high and dry on the northern bank; but when I visited Tandi again in 1846, there was no trace of them. A small wooden bridge of thirty-eight feet span, and forty feet above the stream, is thrown across the Bhaga river about four miles from Tandi. Fifteen miles below Tandi, and five miles above Treloknáth, the Chandra Bhaga is crossed by a couple of spars covered with loose planks. The bridge is eighty-five feet long and forty-three feet above the water. Two miles above this bridge the river was not less than 300 feet broad. Above Chatrgarh and opposite Káshtwár, the Chandra Bhaga is crossed by suspension-bridges. 491 ●

From Káshtwár the river sweeps suddenly round to the south-west as far as Doda. It then turns due west towards the fort of Riyâsi, where it resumes its south-westerly course to Aknur, at the foot of the hills, a total distance of 150 miles. In this part of the course the fall is 4,000 feet, or 26·6 feet per mile. It receives the Banahal and the Budhil, above Aknur, and the two Tohis of Rajaori and Chaneni above Vazirabad. By these and some other small streams, its winter discharge is increased 133X

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During the dry season the Chenáb is fordable in many places between Sodra and Ramnagar. Opposite Sodra in 1848 there was a good ford, crossing no less than seven branches of the stream. The Ramnagar ford was open during the whole of our operations in December 1848, and January and February 1849. The other fords were constantly liable to shift, but three days before the battle of Gujrat I discovered a good ford between Vazirabad and Ramnagar, by which Brigadier Markham's brigade crossed the Chenáb on the 19th February.

I have no means of ascertaining the maximum discharge of the Chenáb during July and August. Macartney measured it in July at Vazirabad, when the stream was 7,590 feet (nearly one mile and a half) broad, with a depth of fourteen feet, and a current of five miles an hour; but these data are too vague for even an approximate result. The depth for one half of this breadth was probably not more than one or two feet.

In July 1839, I found the main channel of the Chenáb above Vazirabad to be 2,760 feet broad, but the depth could not be ascertained with any certainty; in many places it was more than eighteen feet. The mean depth was probably about nine feet, and if we allow two and a half miles as the average rate of the current, the maximum discharge would be 56,000 cubic feet, or with the six small branches to the westward, not less than 60,000 cubic feet. The increase of the Indus is nine-fold, while that of the Ganges is fifteen-fold. The mean between these is twelve-fold, which, if applied to the Chenáb, would give a discharge of 54,600 cubic feet for the maximum. The actual maximum discharge is probably between 50,000 and 60,000 cubic feet.

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IX.—THE RÁVI RIVER.

133 The Rávi is the smallest of the Panjáb rivers. In the hills it is generally called Ráwá or Râwati, which is only a spoken form of the Sanskrit Trâvati, from which the Greeks made Hydraotes. The Rávi is formed of three principal branches,—the Rávi proper, the holy Budhil, and the Nai, which make a triple junction below Wulás, in the district of Chamba. I have seen all these rivers myself, and am indeed the only European who has yet visited the head-waters of this stream.

The Rávi rises in the petty dismembered state of Bangál, in N. latitude 32° 20′, and E. longitude 77° 0′. It takes at first a south-westerly course, and then bending to the north-west receives its principal tributaries at Wulás, a distance of sixty miles from its source. Its highest springs rise at the junction of the Dhaola Dhar and Lahul mountains, at an elevation of not less than 16,000 feet. As the height of the river at Wulás is only 5,000 feet, the fall is 183·3 feet per mile. From Wulás to Bisoli it continues its easterly course for fifty miles, and then turns to the south-west for twenty miles, to the neighbourhood of Tirikot, where it enters the plains. Its whole length is only 130 miles, while its fall is 15,000 feet, or 115·4 feet per mile.

The sacred Budhil rises in the Lahul mountains, to the north of the Rávi. Its whole course is not more than thirty-five miles from east to west, while the fall is 11,000 feet, or 314·3 feet per mile. Below Barmawar, the former capital of Chamba, the Budhil is crossed by a wooden bridge formed of spars covered with loose planks. The width is four and a half feet, the span sixty-eight feet, and the height above the river ninety-

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eight feet. This bridge has a hand-rail knee high on each side. A petty feeder of the Budhil rises in the small and holy lake of Mani Mahés.

The Nai river rises on the western face of the Kali Debi mountain, in the Lahul range. Its general course is to the south-west, and its whole length is only thirty miles. Its fall is therefore 366·6 feet per mile.

The Ráwá or Râwati, just above the junction of the Budhil and Nai at Wulás, is spanned by a birchen-rope suspension-bridge 116 feet in length. It is therefore about double the size of the Budhil river. Below Wulás the road leaves the river and crosses over the mountains, to avoid the precipitous cliffs which overhang the stream. At Mahila, ten miles above Chamba, the Rávi is crossed by another suspension-bridge of 169 feet span. Between the bridge and Chamba the river takes a sudden sweep to the left, between overhanging rocks not more than fifteen feet apart. A curling wave returns to meet the rushing stream, and a shower of mist is perpetually rising from the shock. Then all is smooth, and the stream pours headlong into a gulf below, and is instantly dashed back by the opposing rocks in a huge curling wave.

Just below Chamba the Rávi receives a considerable feeder from the north. This is the Sáwá, or Sár Nala, which rises in the Saj Joth, in the Lahul range. On entering the plains the Rávi takes a south-westerly course past Lahore for 430 miles to Chichawatni, where it turns to the west, and after seventy miles more falls into the Chenáb below Sirdarpur. The whole length of the Rávi from its source to its confluence with the Chenáb is 630 miles, and its minimum discharge is 2,700 cubic feet. The Rávi is fordable throughout the winter season, but the bed is full of quicksands.

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X.—THE BYÁS RIVER.

The Byás is perhaps the best known of all the Panjáb rivers, from its source to the foot of the hills below Mirthal. Its Sanskrit name is *Vipása*, from which the Greeks made Hyphasis and Bibasis. The common name of Byás is derived from the small pool at the source of the river, which is called Vyás Rikhi or Vyása Rishi. This sacred spot is situated in the Rotang pass, at the head of the Kullu valley, in N. latitude 32° 25′, and E. longitude 77° 10′, at an elevation of 13,000 feet above the sea. For seventy-five miles the river flows nearly due south past Sultánpur, the capital of Kullu, to the village of Larji, where it is joined by two large tributaries,—the Sainj and the Tirthan. Above this it receives the Parbati and the Gomati rivers from the east, besides many smaller streams. The Gomati is fordable with difficulty, but the others can only be crossed by bridges. The Sainj has a course of about fifty miles, the Parbati and the Gomati of forty miles, and the Tirthan of thirty miles. From the source to Larji the fall is 9,400 feet, or 125·3 feet per mile. From Larji the Byás sweeps suddenly to the westward through a narrow chasm in the rocks several hundred feet in depth. The stream is deep and rapid, but before the wearing down of this cleft the whole of the lower part of the valley must have been submerged. From Larji to Mandi the distance is not more than twenty-five miles, while the fall is 1,000 feet, or forty feet per mile.

The Byás continues its westerly course through this narrow channel to Mandi, above which it receives the Ul river from the north, and the Sukhet river from the

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133 3 P.M. This is in fact the hour at which I have found that all these snow-fed streams reach their highest level. If, therefore, we assume that the Sutluj, at the mouth of its last great feeder, the Baspa, reaches its maximum at 3 P.M., we shall obtain a mean velocity of six miles and a quarter per hour as far as Kepu, a distance of seventy-five miles.

XII.—THE SPITI RIVER.

The Spiti river, which is perhaps as large as the Sutluj itself is formed of two principal branches,—the Spiti and the Pára-ti or Zang-sum river. It takes its rise near the Bara Lacha Pass, in N. latitude 32° 4′, and E. longitude 77° 40′, at an elevation of 16,500 feet (the height of the Bara Lacha Pass). From its source to the village of Mane, it flows in a south-easterly direction for eighty-five miles, and then turns to the eastward for thirty-five miles to its junction with the Pára river. The fall is 6,000 feet, or fifty feet per mile. From Chang-Razing the river turns to the south for twenty-five miles, through a narrow rocky channel to its confluence with the Sutluj. The fall to this point is 2,000 feet, or eighty feet per mile; and the whole fall, throughout its entire course of 145 miles, is 8,000 feet, or fifty-five feet per mile.

In the upper part of its course, the Spiti river partakes of the general character of the Tibetan streams, and spreads its waters over a breadth of nearly half a mile. It thus becomes fordable, during the winter season, as far as Dangkhar, where it receives the Pin river from the south. Below this, it is crossed by several suspension-bridges. Opposite Rangrig, it is spanned by a spar

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bridge with a hurdle footway. At Shálkar, below the junction of the Párá, it is crossed by another spar bridge ninety-two feet long; and there is a third wooden bridge between Liya and Nako.

The Párá-ti, or Párá river, was considered by Alexander Gerard to be larger than the Spiti; but there is no comparison between the two. The Párá is only a very large rushing torrent, while the Spiti is a very deep rapid river. The Párá rises in the Parang Pass, to the north of the Bara Lacha range, in N. latitude 32° 25′, and E. longitude 77° 50′, at an elevation of 18,000 feet. It first flows for about twenty-five miles to the north-east, and for about twenty-five miles to the east as far as Chumur. From this point it turns to the south-east, and afterwards to the south-west, to its junction with the Spiti at Chang-Razing. Its whole length is 130 miles, and its fall about 7,500 feet, or 57·7 feet per mile.

Just above the confluence of the two rivers, there is a hot spring named Zang-sum, and the lower part of the Párá is sometimes called by this name. Alexander Gerard took the Zang-sum for another river, and has accordingly entered it in his map. But it is quite evident that he mistook the Gyu, a small tributary which joins the Spiti just above the confluence of the Párá, for the Párá itself. I surveyed this locality with some care, and can therefore state positively that Alexander Gerard was mistaken.

Four miles above its confluence with the Spiti, the Párá river is spanned by a single block of granite, which forms a vast natural bridge eighty-five feet in length, and from twenty-five to thirty feet in breadth and depth. The stream below is contracted to a raging torrent, not more than fifteen feet in width.

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VI.—ROADS, PASSES, BRIDGES.

I.—ROADS.

491 In Tibetan every road is called *Lam;* but the high-roads are distinguished by the name of *Lam-chhen*, or "Great Roads," and *Gya Lam*, or "Passable Roads."* The principal road is that between Kashmir and Yarkand; the next in importance is the road to Lhasa, viâ Garo, and the third is that which leads through Rukchu, Láhul, and Kullu, to the cities of Nurpur, Amritsar, and Ludiana. Some of the other roads, though not much frequented by merchants, are still deserving of notice, as they have on three different occasions been 175 made use of by the conquerors of Ladák. About A.D. 1600, the Musalmans of Balti, under Ali Sher, invaded Ladák on the west by the valley of the Indus. In 1686, the Sokpos or Sacæ invaded it on the east by the Rudok road; and in 1834, the Hindus of Jammu, under Zorawar Sing, invaded it on the south by the route from 491 Kashtwar into Suru. Moorcroft mentions another commercial line between India and Kotan,† "which was frequented in the time of Shah Jehan and closed by the Chinese subsequently to their acquisition of Kashgar."

* *Lam*, a road; *Lam-chhen*, a great road; *brGya-lam*, a passable road.

† Transactions Royal Asiat. Soc., I. p. 55.

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In another place* he says that this road ran through Garo and Ruthog to Sarikia, half-way between Yarkand and Kotan; and in a third place† he states that from Rudok across the mountains to Kotan is a journey of three or four days only. Now both the Chinese geographers and the Jesuit missionaries agree in placing Kotan in N. latitude 37°, or just three and a half degrees, or about 250 miles, to the north of Rudok. The journey must therefore be one of three or four weeks, instead of three or four days. The only probable explanation of Moorcroft's statement is, that the frontier of Kotan is only three or four days' journey from Rudok. His very mention of Sarikia, a place half-way between Yarkand and Kotan, shows that Moorcroft must have known the true distance of Kotan, as his own munshi, Izzet Ullah, makes Sarighout (or Sarikia) just thirteen marches from Lé. It cannot, therefore, be less than eighteen or twenty days' journey from Rudok. The road from India to the Niti Pass, through Garo and Rudok to Yarkand, is, therefore, the same as that from Lhasa to Yarkand, by the valley of the Indus. The two routes join at Garo, and follow the Indus to Kak-jung, from whence the traveller may proceed either down the Indus to Lé, and across the mountains to the Shayok river, or he may cross the Tsaka Lá and proceed direct to the Shayok by Chushal or Pangkong.

The different roads that lead to Lé, on all sides, are the following:—

1. The western road from Kabul and the Punjab, through Kashmir.

2. The south-western road from the central Punjab, through Jammu, Kashtwar and Zanskar to Lé. A

* Travels, I. p. 373. † Travels, I. p. 361.

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49/ branch of this road runs from Zanskar through Rukchu to Lé.

3. The southern road from Lahor and Amritsar, through Kullu, Láhul and Rukchu to Lé. A branch road from Bisahar, viâ Spiti, joins this road in Rukchu.

4. The south-eastern road from Lhasa to Garo and the Indus to Lé. A branch from India, viâ the Niti Pass, joins this road at Garo.

5. The eastern road from Chinese Tartary, through Rudok and the valleys of Chushal and Sakte to Lé.

6. The northern road from Yarkand and Kotan, over the Karakorum mountains and down the Shayok and Nubra rivers to Lé. The old route, which is now closed by glaciers that dam the stream, followed the Shayok from its source to Sassar, and thence either continued down that river, or across the mountains and down the Nubra river to Lé.

7. The north-western road from Balti, viâ the Shayok and Indus rivers, to Lé.

II.—1st. THE WESTERN ROAD.

The road from Kashmir traverses nearly the whole extent of Ladák from west to east, from the Seoji Lá, at the head of the Dras river, to Lé. From the Kashmirian Pass it follows the course of the Dras river to its junction with the Suru river, up which it proceeds as far as Kargyil. From thence it ascends the Purik valley past the fort and town of Paskyum, as far as Waka, where it leaves the Waka river, and crosses the Namyika Pass (13,000 feet) to the bed of the Kanji river. Thence over the Photo Lá, an easy pass (13,240 feet), to the village of Lama Yurru, from which it follows the course

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of the Wanla-chu to its junction with the Indus, below the bridge of Khallach, where it crosses the river to its right bank. From this point it ascends the Indus, past the villages of Nurla, Saspul, Bazgo, and Nyimo, to Pitak, where it leaves the river and turns to the north-east for a few miles to the city of Lé. The whole distance from Kashmir to Lé is 228 miles.

I have travelled this road myself, and I can vouch for its being one of the most excellent and most easy routes to be found throughout the Alpine Punjab. It is passable from March till November, when it is closed by the vast masses of snow that accumulate on the Kashmir side of the Scoji La, and which render the passage very dangerous, both in March and April as well as in November. The greater portion of this road which lies in Ladák was made by Zorawar Sing after the conquest of the country in 1834. The large bridge over the Indus at Khallach, as well as the smaller bridges on this road over the Wanlá, Kanji, Waká, Suru, and Dras rivers, were all built by the energetic invaders, who, knowing the value of good communications, have since kept them in excellent repair. No road can well be worse than the few marches on the Kashmirian side of the pass, which are still in the same state as described by Izzet Ullah* in 1812: "The road is difficult and rocky, so as to be impassable to a mounted traveller." This is the most frequented of all the roads into Ladák, with perhaps the single exception of the northern line from Yarkand to Lé.

The following table shows the names and distances of the stages.

* Quarterly Oriental Magazine, March 1825, p. 104.

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FROM KASHMIR TO LÉ.

		Miles.	
1	Gándar Bal	9¾	left bank of Sindh river.
2	Kangan	9⅝	right bank ditto.
3	Surbara	9⅝	left ditto ditto.
4	Gagangir	10⅝	right ditto ditto.
5	Sonamarg	7⅛	ditto ditto ditto.
6	Báltal	8⅝	ditto foot of Pass.
7	Maten	15⅞	cross the Seoji Lá (Pass).
8	Drás	11⅛	left bank of Dras river.
9	Jasgund	7⅝	on the left bank (opposite).
10	Kharbu	12⅛	right bank ditto.
11	Kargyil	11¾	at junction of Waka and Suru river.
12	Dok	11⅜	left bank of Waka river.
13	Molbil	8⅝	right bank ditto.
14	Charak	7½	cross the Namyika Pass.
15	Hesku	11½	right bank of Kanji river.
16	Lama Yurru	9	cross the Photo Lá (Pass).
17	Khallach	8⅝	cross the Indus by bridge.
18	Nurla	8½	right bank of Indus.
19	Hemis-tokpo	8⅝	ditto ditto.
20	Sáspul	9⅝	ditto ditto.
21	Bazgo	8	ditto ditto.
22	Tháru	11¼	ditto ditto.
23	Lé	11⅜	ditto ditto.
		228 miles.	

III.—2nd. THE SOUTH-WESTERN ROAD.

During the first years of the occupation of Ladák by Zorawar Sing, the different roads from Jammu to Lé were constantly traversed by the Dogra troops, who latterly always took the route through Káshtwár and Zanskar in preference to that of Káshtwár and Suru—which they thought considerably longer. Dr. Thomson travelled from Jammu to Lé, in 1848, but he took the hill route, from Bhadawár to Chatrgarh. In the same

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year he had also travelled from Kashmir to Jammu. 491
We are therefore able to compare the route from Jammu to Lé, viâ Zanskar, with that by Kashmir. The comparison is altogether in favour of the road by Kashmir, with respect to the facility of crossing the different passes, which are less lofty and much more easy of ascent and descent than those of the other road. With respect to distance, the two roads are much about the same. The road travelled by Dr. Thomson is actually eighteen miles longer than the route by Kashmir; but as the route from Zanskar to Lé, viâ Marka and Kiyo, is two days' journey less than that followed by Dr. Thomson, the two roads by Kashmir and Zanskar may be considered about the same length.

From Jammu the Zanskar road proceeds direct through Ramnagar to Bhadarwár, a distance of seventy-three miles. From thence it crosses the Bhadri-Dhar Pass, 10,165 feet, into the Chamba district, and over the Saj-Joth (14,794 feet) into the valley of the Chandrabhága near Chatrgarh, a further distance of 116 miles. From the Chenab the road crosses the Bara Lácha range by the Umasi-Lá or Burdar Pass (18,125 feet) to Phadam, the chief town in Zanskar, a distance of fifty-six miles. In this rugged district the road is bad and difficult. At first it follows the course of the Zanskar river as far as Chand-Lá, where it enters the mountains. Beyond Pangache it proceeds over another pass (16,495 feet) and descends rapidly to the river, which it crosses by the Nira bridge. From thence it ascends the lofty mountains that bound Zanskar on the west, and enters the Wanlá district by the Sing-gé-Lá (16,952 feet), from which it follows the Wanlá river to Lama Yurru, and

1; Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans AJ4

491 thence to Lé, as in the first route. The lofty passes on this road are seldom open before June, and they are always closed by the end of October.

The following are the marches made by Dr. Thomson from Jammu to Lé.

		Miles.
1	Tuton-ki-kuī (the mulberry well)	8
2	Sarohi Sar	7
3	Thalaura	8
4	Ramnagar	10
5	Garta	7
6	Pata	9
7	Dudu	6
8	Camp	8
9	Bhadarwar	10
10	Camp	7
11	Langera	8
12	Dego	11
13	Buju	10
14	Kaltor	11
15	Banderi	7
16	Camp	7
17	Ditto	9
18	Ditto	12
19	Pargwál	8
20	Asdhari	10
21	Shol	9
22	Lyundi	7
	Carried forward ...	189

		Miles.
	Brought forward ...	189
23	Chishot	8
24	Sumcham	8
25	Camp	6
26	Ditto	5
27	Ditto	10
28	Markim	10
29	Phadam	9
30	Tungdé	8
31	Chandla	10
32	Sumdo	10
33	Pangache	9
34	Nira	8
35	Yulchung	5
36	Plutakas	11
37	Haunpata	8
38	Wanla	10
39	Khallach	11
40	Nurla	8
41	Saspol	10
42	Nyimo	10
43	Lé	11
	Total miles ...	374

From Phadam there are two other routes to Lé, the direct route through Zanskar and the winter route through Rukchu. The latter was taken by the Vazir Zorawar Sing, in the winter of 1835, when all the passes on the more direct road had long been closed.

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TWO ROUTES FROM PHADAM IN ZANSKAR TO LÉ. 491

Winter Route.	Direct Route.
1 Muni.	1 Tondé.
2 Yang Jhul.	2 Jand-lá.
3 Maleng.	3 Sumdo.
4 Kina Jhula.	4 Dagmoche.
5 Zongmar.	5 Karna Sumdo.
6 Chumik Marpo.	6 Rabrang.
7 Tokpo Soma.	7 Marka.
8 Charáp.	8 Kyo (Skyo or Skio).
9 Dong chéchan.	9 Shingo (Pass).
10 Pachálong.	10 Rumbak.
11 Kyang-cho.	11 Pitak.
12 Rukchin.	12 Lé.
13 Debraug.	
14 Gya.	
15 Miru.	
16 Ugshi.	
17 Hemis.	
18 Thagna Goupa.	
19 Chachot.	
20 Lé.	

IV.—3rd. THE SOUTHERN ROAD.

By this route the shawl wool is brought to the large cities of Nurpur, Amritsar, and Ludiana, all of which make a return in manufactured shawls and coarse brocades. The roads from all these places meet at Mandi (the market) or Maudinagur (market-city) on the Byas river, the capital of the small state of that name. From Nurpur the merchants proceed viâ Kangra and Baijnath; from Amritsar, viâ Hushiyarpoor and Nadon; and from Ludiana, viâ Ropar and Bilaspur; the distances of the first and last being about 120 miles; of the second, about 150 miles. 491 439

From Mandi this road proceeds by the iron-mines of Kumán to Sultânpur, the capital of Kullu. From 491 [135]

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491 thence it ascends the Byas to its source on the Rotang Pass (13,000 feet), and descends upon the Chandra river at Koksar, the first village in Lahul, at an elevation of 10,000 feet. It then follows the Chandra river to its junction with the Bhaga, opposite Tandi, from whence it ascends the latter to its source in the Bara Lacha Pass (16,500 feet). From this pass it descends the Yunam river into Rukchu, and thence crosses the Lunga-Lacha Pass (17,000 feet) to the triple confluence of the Sumgal river. There it ascends the plain of Kyang to the crest of the Thung-Lung Pass (17,500 feet), from whence it descends the Gya rivulet to the Indus at Ugshi, and thence down that river to Lé. All the passes on this route are easy, especially the Bara Lacha, over which a road might be made passable for carriages, so gradual is the ascent and descent. The Bara Lacha and Rotang Passes are generally closed in the end of October, and are not open again until the end of May or beginning of June. The most difficult part of this route is the crossing of the Chandra river, as the suspension-bridge of birchen-twig ropes is annually overwhelmed beneath a dense mass of drifted snow. In August, 1846, the late Mr. Vans Agnew and myself were detained for two days opposite Koksar until the bridge was partially put up, when with the assistance of plenty of rope, which we had purposely carried with us, we managed to pass over all baggage without any difficulty.

From Mandi the route is as follows:—

		Miles.	
1	Kumân	11	an iron-mine.
2	Bajaora	14	right bank of Byas river.
3	Sultanpur	9	capital of Kullu.
4	Dwára	10	right bank of Byas river.
	Carried forward .	44	

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		Miles.	
	Brought forward ...	44	
5	Monáli	14	right bank of Byas river.
6	Ralha	10	camp foot of Pass.
7	Koksar	11	cross the Rotang Pass.
8	Sisu	10	right bank of Chandra river.
9	Gundla	9	ditto ditto.
10	Kárdang	10	left bank of Bhaga river.
11	Kolang	13	right bank ditto.
12	Dárcha	10	ditto ditto.
13	Patseo	8	a rude stone bridge.
14	Mongba	10	foot of Pass.
15	Kelang	12	cross the Bara Lacha.
16	Charpa	8	mouth of Cherpa river.
17	Sumdo	14	foot of Pass.
18	Sumgal	12	cross Langa Lácha Pass.
19	Mure-Tsho	10	a small pond of fresh water.
20	Rukchin	7	Boti camp.
21	Larsa	14	foot of Pass.
22	Gya	14⅝	cross the Lunga Lácha.
23	Miru	7⅛	
24	Ugshi	7¼	left bank of Indus.
25	Marchalang	8¾	ditto ditto.
26	Chachot	11	ditto ditto.
27	Lé	9⅛	cross Indus by bridge.
	Total ...	283⅜	miles.

The Bisahar road, viâ Kullu, joins this road at Sultânpur, the capital of Kullu, from which Rampur is eight marches distant. Since 1846, this road has been much improved by the British government, and the access to Kullu, both from Simla and from Rampur, is now easy. The road from Bisahar, through Spiti into Rukchu, joins the above road either at the crest of the Bara Lacha Pass or at the foot of the Thung Lung Pass. The former is the more easy route, but the latter is the more frequented. From Rampur the road ascends the Sutluj river to the Wongto bridge, where it passes over and enters the mountains to Babé. From thence it

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491 crosses the Tari Pass (15,282 feet) into the Pin valley, which it descends to the junction of the Pin river with the Spiti. The latter is crossed by a jhula to Dangkhar, from whence the road proceeds to the monastery of Kyi and up the left bank of this stream to Losar, where it changes to the right bank. Beyond Losar it leaves the Spiti river and crosses the Kulzum Pass (14,821 feet) into the upper course of the Chandra river, which is quite uninhabited, and ascends the stream to its source in the Bara Lacha Pass. The other road branches off from the monastery of Kyi and crosses the Parang Pass (18,502 feet) into Rukchu at the source of the Para river. It then follows the river to Norbu Sumdo, whence it crosses a low range of hills to the southern end of the Tshomo-Riri lake. From this lake it crosses the Nakpo Gonding Pass (18,000 feet) and the Polokonka Pass (16,500 feet) to the Tsho-kar or White Lake, beyond which it joins the first road at the foot of the Thung-Lung Pass.

The following are the stages on the road by the Bara Lacha Pass.

FROM RAMPUR TO LÉ.

		Miles.	
1	Gaora	10	left bank of Sutlej.
2	Saráhan	10	ditto ditto.
3	Tránda	14	ditto ditto.
4	Nichár	12	ditto ditto.
5	Yangpa	11	cross the Sutlej.
6	Larsa	16	cross the Tári Pass.
7	Mud	12	on Pin river in Spiti.
8	Tangti	12	ditto ditto.
9	Danghkar	15	cross the Spiti Pass.
10	Lara	8¾	left bank of Spiti river.
11	Rangrig	8¼	ditto, halting-ground.
	Carried forward ...	128½	

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		Miles.	
	Brought forward ...	128½	
12	Chikyam	10	
13	Kirla	12	
14	Losar	12	right bank.
15	Camp	10	foot of Pass.
16	Ditto	9	cross the Kulsum Lá.
17	Ditto	12	left bank of Chandra.
18	Ditto	14	ditto ditto.
19	Ditto	12	ditto ditto.
20	Ditto	12	cross the Bara Lacha Pass.
		232½	
	Thence 12 to Lé,	122½	miles.
	Total ...	355¼	miles.

The following are the stages on the road by the Tsho-mo-Riri Lake.

FROM RAMPUR TO LÉ.

		Miles.	
11	Rangrig	129½	
12	Gyihbar	6½	
13	Bongrochan	8½	
14	Tratung Kongma ...	7	cross the Parang Pass.
15	Camp	11	
16	Norbu Sumdo ...	11	
17	Tshomo Riri	10	south end of lake.
18	Korzo Gonpa... ...	13	
19	Ramzung	11	
20	Polokonka Pass ...	15	2 miles to W. of Pass.
21	Tsho-kar	11	
22	Larsa	16	
		252½	
	Thence 6 to Lé,	57½	
	Total ...	310	miles.

V.—4th. THE SOUTH-EASTERN ROAD.

Of the portion of this road that lies between Lhasa and Kailas, very little is known except by report.

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From Lhasa, which I do not think can be less than ten or eleven thousand feet above the sea, the road ascends the Sanpu river, past Tashi Lhunpo and Gáldán to its source on the eastern face of the Kailas mountain. It then crosses this mountain to the northern bank of the holy Manasarovara Lake (15,200 feet). The direct distance between these points on the map is upwards of 10° of longitude, which in the 30th degree of latitude are equal to 600 English miles, to which one-half* more must be added for the windings and ascents and descents of a road in a mountainous country. This will give a distance of 900 miles, equal to a journey of three months, which the people always state it to be. From the Manasarovara Lake to Garo the road has been traversed by Moorcroft. The distance is about 110 miles, or ten days' journey—past the Lake of Rawan Hrad, and over several lofty spurs of the Kailas range, which give rise to numerous small feeders of the Sutluj and Indus. Garo itself is situated, according to my information, on the main branch of the Indus, which is there called the Higong-chu or Higong river, simply because it flows past the village of that name. From Garo to Chibra, and thence to Lé, the road lies down the valley of the Indus, and generally along the bank of the river. The distance from Garo to Lé is not less than 350 miles, or

* This is not a mere assumption, but a fact deduced from actual surveys. Thus my survey makes the distance between Lé and Kashmir 228 English miles. The difference of longitude is 2° 40′, which, in the latitude of 34°, is equal to 154 miles; to which by adding one-half more, we obtain 231 miles, which is within three miles of the actual measurement. Again, the difference of latitude between Mandi and Lé is 2° 30′, equal to 174 English miles. By adding one-half more, we obtain 260 miles, the measured distance, according to my survey, being 283 miles.

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about thirty-five days' journey. The whole distance from Lhasa to Lé is therefore about 1,350 miles, a journey of four months and a half. 491

The principal places on this route are the well-known Tashi-Lhunpo, the residence of the Tashi Lama, who was visited by Turner; Gáldán, which was for some time the residence of the Tibetan court; Garo, which is now a great mart for the interchange of the productions of India and China; and Tashi Gong, which is a celebrated monastery. I will say nothing more regarding this road, as all the accessible portions of it have been traversed by Captain H. Strachey.

VI.—5th. THE EASTERN ROAD.

This road leads from the unknown countries inhabited by various Mongol tribes, through Rudok to Lé. Nothing whatever is known of it to the eastward of Rudok, except that by it the Mongol tribe of Sokpo invaded Ladák in 1686 and 1687; and again in the beginning of 1841, immediately after Zorawar Sing's death, about three thousand Changpas* are said to have entered Ladák for the purpose of assisting the young Gyalpo. They advanced to Lé, where they remained about six weeks; but on the approach of Dewán Hari Chand and Vazir Ratanu with troops from Kashmir, they fled hastily back again by the same route. As this road has been surveyed by Captain H. Strachey, from the neighbourhood of Ruthog to Lé, any further remarks from me are quite unnecessary.

* *Byang-pa*, pronounced *Chang-pa*, "northern men," or men of Chang-thang, the northern plains.

1; Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans AJ4

VII.—6th. THE NORTHERN ROAD.

• 491 This road leads from Yarkand and Kotan, over the Karakoram mountains (18,660 feet) to Lé. The best account of it that we possess is that by Izzet Ullah, who traversed it in 1812. But since that time several glaciers have stretched their mighty masses across the bed of the Shayok, and the old road by the river has been completely closed. The new road from Karakoram leaves the Shayok, or Khundan, river at the foot of the pass, and crosses over an elevated table-land to Sassar, where it again meets the Khundan. A short distance above Sassar Dr. Thomson examined two glaciers that stretched across the river. From this point the road quits the Khundan and crosses a lofty range to the bed of the Nubra river, above Panámik. It then follows the course of the Nubra river to its junction with the Shayok, from which it proceeds direct to Lé.

Izzet Ullah's route was the following :—

FROM YÁRKAND TO LÉ.

		Hours.	Miles.	
1	Chagachag	4 =	6	
2	Tokaji	9 =	13½	on the Kerghalek river.
3	Langer	10 =	15	
4	Aurtang	2 =	3	
5	Ak Masjid	9 =	13½	
6	Khalastan	7 =	10½	
7	Chakilak	6 =	9	
8	Mizár	6 =	9	
9	Tezak Lak Payin ...	8 =	12	
10	Yagni Dawan ...	9 =	13½	
11	Yartoli	5 =	7½	right bank of river.
12	Bagh Haji Mohammad	2 =	3	
13	Igersal di	9 =	13½	
14	Taghteh	7 =	10½	
	Carried forward ...	93 =	139½	

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		Miles.		
	Brought forward ...	93	=139½	
15	Khafalun	9	= 13½	
16	Aktagh	10	= 15	
17	Surighout	9	= 13½	
18	Camp	7	= 10½	foot of Karakoram Pass.
		128	=192	miles.
1	Camp to S. of Pass ...	10	= 15	
2	Yapchan	10	= 15	
3	Khundan	10	= 15	right bank of Shayok.
4	Chong Tash	9	= 13½	right ditto.
5	Yartobi	7	= 10½	
6	Mandalik	5	= 7½	left ditto.
7	Dong Bailak	10	= 15	left ditto.
8	Chong Aolang ...	9	= 13½	right ditto.
9	Chong Jangal ...	4	= 6	right ditto.
10	Chunchar	9	= 13½	right ditto.
11	Dakchu Dunga ...	4	= 6	right ditto.
12	Adgam	7	= 10½	left ditto.
13	Digar	...	4½	
14	Camp	...	12	
15	Lahu	...	7½	cross a Pass.
16	Lé	...	7½	
	Karakoram to Lé	...	172½	miles.
18	Yarkand to Karakoram	...	192	
	34 marches. Total	...	364½	miles.

Dr. Thomson's route from Lé to Karakoram Pass is a more direct one, and consequently a shorter one; the whole distance being only 147½ miles, or twenty-five miles less than Izzet Ullah's route. But the longer route up the Khundan river had the advantage of being tolerably level, whereas the present route crosses no less than three lofty passes, and is besides much more rugged and difficult. The Karakoram Pass is not less than 18,600 feet above the sea, and it is perhaps very nearly 19,000 feet high. M

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491 19,000 feet high. Dr. Thomson's route from Lé to the Karakoram Pass is as follows :—

		Miles.
1	Camp	6
2	Kardong	10
3	Kalsar	9
4	Diskit	8
5	Lyakjung	5
6	... ...	9
7	Chirasa	
8	Panámik	10
9	Takshe	4
10	Changlung	7½
	Carried forward ...	68½

		Miles.
	Brought forward ...	68½
11	Camp	8
12	Ditto...	4½
13	Ditto...	6
14	Sassar	8
15	Margai	9½
16	Camp	9
17	Ditto...	12
18	Ditto...	12
19	Karakoram Pass ...	10
	Total ...	147½

VIII.—7th. THE NORTH-WESTERN ROAD.

This road leads from Balti and the neighbouring Musalman district up the bed of the Indus to Lé. During the summer season, when the waters of the river are much swollen by the melted snow, the Indus route is very difficult, and travellers generally prefer ascending the Shayok river as far as Chhorbad, and thence crossing the mountains by the Hánu Pass, 16,890 feet, to the Indus at the fort of Hánu. From Hánu to Lé the route ascends the Indus. Both of these routes have been travelled by Mr. Vigne. Dr. Thomson's route was by the Shayok alone; and to him we are indebted for the survey of that river between Tirit and Keris, where it joins the Indus. The distance from Skardo to Lé, by this route, is 236 miles, or just eight miles more than the road from Kashmir to Lé. The following are the marches from Lé to Skardo, by the Latsa Pass, 17,666 feet.

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		Miles.
1	Sabu	6
2	Foot of Pass... ...	12
3	Digar	5½
4	Chatti	16
5	Tirit	8½
6	Tagar	8½
7	Panámik	12
8	Chirasa	10
9	Lyakjung	9
10	Hundar	9½
11	Tertse	10
12	Unmáru	5½
13	Karu	9½
14	Waris	8
15	Bogdan	7
16	Chulungka	9
	Carried forward ...	147

		Miles.
	Brought forward ...	147
17	Turtuk	7
18	Prámu	11
19	Siksa...	7
20	Kábás	8
21	Surma	12
22	Khapolor	7
23	Karku	10
24	Bragar	4
25	Kunes	6½
26	Kuru	6
27	Keris	8
28	Golochu	9
29	Camp	9½
30	Skardo	4
	Total ...	236

The above are the principal thoroughfares throughout Ladák. Many other roads might be enumerated in all directions, but they are less frequented and more difficult. These by-paths are called *Lam-than*,* and *Lam-dogpo*. They are used chiefly by the people of the country in passing from their own districts into the next; such are,—1st, the road over the Omba Lá, between Suru and Drás; and 2nd, the road over the Vingé Lá, between Zanskar and Purik. Other roads are used only by smugglers; but these are always difficult, although frequently more direct than the high-roads. One of the best known of these smugglers' paths is that which leads from the Chinese district of Chumurti into Láhul and Kullu. From Chumurti the road is followed over the Budhpu Pass to the bed of the Párá river. From thence a rugged path leads over a lofty mountain to the

* *Lam-phran*, pronounced *Lam-than*, "little road;" and *Lam-Dogpo*, "narrow road."

1: Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans AJ4

upper course of the river, which is crossed a second time, and over another range of mountains to the head of the Charpa river. From the bed of the Charpa different routes were followed over the mountains to the upper and uninhabited course of the Chandra river, from whence the northern road leads over the Bara Lacha Pass into Láhul, and the southern road direct into Kullu by the Parbati river.

IX.—PASSES.

A Pass in Tibetan is called *Lá*. The crest of a Pass is named *La-tse*, and the foot of a Pass *La-tsa*.* The last word is variously pronounced: by some it is called Larsa, of which spelling many examples may be found in our maps at the bottom of Passes; by others it is called Lacha, as in Bara Lacha (for Bara Latsa). Others again pronounce the *s* distinctly; which last has given rise to Dr. Gerard's spelling of Para Lassa. *Rong* is a defile, and *chong-rong* is a narrow defile. The principal passes have already been mentioned in my description of the high-roads of Ladák; but a tabular enumeration of them may be useful for comparison.

Names.	Heights.	Authorities.	Positions.
Karakorum ...	18,660	Dr. Thomson ...	Head of Shayok river.
Sassar	17,500	Ditto ...	between Nubra and Shayok river.
Hanu	16,890	Col. Bates ...	between Indus and Shayok river.
Lé Pass ...	17,066	Dr. Thomson ...	between Lé and Nubra.
Lazgung ...	17,500	(estimated) ...	ditto ditto.

* *Lá* is the simple form. *La-r Tse*, is the crest of a Pass.

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X.—PASSAGE OF RIVERS.

491 501 The great rivers of Ladák are crossed by ferries, fords, and bridges. Fording is the most usual means of crossing both the Indus and the Shayok, in the upper parts of their sources, where their waters are widely spread and shallow. In the neighbourhood of Lé, where the Indus becomes deep and rapid, it is spanned by three bridges, and just below Lé, where the current is less rapid, people are ferried across on inflated skins. The Zanskar river is bridged in two places: and is not I believe ever fordable. In Láhul the Chandra and Bhaga rivers are both bridged; but I have seen the Chandra forded at Koksar in October, and I have been ferried across it at the same place in September. In Spiti, the Párá river is crossed by a natural bridge formed of an enormous mass of rock that has fallen across the stream; and the Spiti river itself is bridged in several places. In the winter season it is fordable in many places.

103 A ford is called *Gal* in Tibetan; and the name is applied to one of the principal branches of the Zanskar river, which is called *Sum-gal*, or the "Three Fords," because it is formed of three streams that are forded one after the other just above their junction. In the summer 491 132 the fording of many of the streams can only be accomplished in the morning; for after ten and eleven o'clock the waters are so much increased by the melted snows that they become quite unfordable. This I have myself witnessed with the Chandra river in October, and with the Charpa river in September; and I have ascertained that it is also the case with the Spiti river.

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A ferry is called *Gru-kha*, and the ferryman *Gru-ba*. In Ladák itself the ferrymen use only rafts made of inflated skins; but on the Sanpu river, even above Lhasa, boats are said to be numerous; and there has always been one on the Indus at Skardo. The name, therefore, is well known in Ladák, more particularly as most of the Lamas have visited Lhasa. The common people are ferried over on a single inflated skin (*phagpa*), but great men usually have a raft formed by placing a bed over two inflated skins. The skin is generally the hide of a buffalo, with the openings carefully sewn up, excepting one of the hind legs, which is kept for inflation. The skin floats with the legs uppermost. The ferryman throws his arm over it, holding the closed leg in his left hand, and a small wooden paddle in his right. The passenger sits down, native fashion, on the skin, and secures himself by holding the ferryman's shoulder as well as the leg of the skin. The ferryman paddles with his right hand, and pushes the skin forward by striking out his legs as in swimming. I have often crossed the Byâs and Chandra rivers in this way. The raft is managed in the same manner; but it cannot be used either in such rough water or in such rapid currents as the single skin.

The bridges of Ladák have different names, according to the materials of which they are constructed. The finest bridges, such as those of Lé and Khallach, are called *Shing-zam*, or "Wooden Bridges," because they span the river with large beams of poplar. A small bridge over the Bhaga river in Láhul is dignified with the name of *Do-zam*, or the "Stone Bridge," because the footway is made of rough stone slabs. *Chag-zam**

* *Zam-pa* is a bridge; and the different terms of *Shing*, wood; *rDo*,

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● 491 or "Iron Bridges," and *Gru-zam* or "Boat Bridges," are known only in the Lhasan territory; but the *Chug-zam* or suspension-bridge is common in many parts of Ladák.

One of the finest specimens of the *Shing-zam* or wooden bridge that I have seen, is the great bridge over the Indus near Lé. I have given a sketch of it in Plate V. It was built by Zorawar Sing, and is called *Chhog-lam-Sar-Zampa*,* or the "New Bridge on the high-road." The Khallach Bridge is similar in construction. They are both railed, and may be ridden over with perfect safety. As the details of construction may be seen quite as clearly in the sketch as in any description, I will only give the dimensions of these two bridges.

The Lé Bridge is a double one, the smaller one having a span of thirty feet, and the larger one of eighty feet. Both are strongly and substantially built of poplar spars, laid touching each other. On each side is a stout railing—the clear breadth between the railings being eight feet. Height above the stream (on 2nd October) fifteen feet.

The Khallach Bridge is seventy-seven feet long and eight feet broad, with a stout railing on each side. Height above the water (on the 15th October) forty-five feet. This bridge is protected by a small square field-work of sun-dried bricks, which covers the northern end on the right bank. It is occupied by twelve men, who are relieved regularly from Lé.

stone; *lChags*, iron; are added to discriminate the material of which the bridge is formed.

* *Chhog-lam-Sar-zam-pa*, "high-road new bridge."—See Plate V. for a view of this bridge.

1: Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans

The *Chug-zam* or suspension-bridges are different from the *jhulas* or swinging-bridges of the Hindu states of Chamba and Bisahar. The passenger walks across the former, but is pulled across the latter. Suspension-bridges are common on the Indus and Shayok above their junction. They are used also in Zanskar, Spiti, and Lahul; and in the Hindu state of Chamba. The Chug-zam is formed of two stout ropes of twisted birch-twigs, about the thickness of a man's arm. The ropes are suspended side by side, about five feet apart at the ends: but they are drawn nearer together in the middle by the weight of the side-ropes and roadway. The side-ropes, about one inch thick, are also made of birchen twigs, and in them is laid the roadway: which, in the bridges that I have seen, always consisted of three ropes (of the same size as the suspension-ropes) laid side by side. In the best bridges of this kind the side-ropes are connected by a close wattling of wicker-work from end to end, to prevent passengers as well as sheep and goats from slipping through. The Chug-zam is a very cheap and a very easy mode of bridging a stream; and when new and well constructed, it is a very safe and not an unpleasant way of crossing. But some old bridges of this kind that I have crossed were both difficult and dangerous. In them the suspension-ropes formed a great curve, the sides were unwattled and completely open; and the roadway in many places was reduced to a single rope. Alexander Gerard* states that he should "think the best *Su-zum* (*Chug-zam*) of 100 feet not altogether safe:" but I have crossed several of greater span, and one of very nearly double that span.

* Kanawar, p. 35.

1: Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans AJ4

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				Span.
The Koksar Chug-zam	over the	Chandra	...	106 feet.
Wulás	„	Ravi	...	116½ „
Mahila	„	ditto	...	169 „

The last span was undoubtedly too great for this kind of bridge; for though the points of suspension were six feet apart, yet in the middle the ropes could only be kept asunder by a piece of wood. The perpendicular or versed sine of the arc was thirty feet. I find the following remark recorded in my note-book immediately after crossing this bridge in August, 1839:—"When riding rapidly in a coach, trees, houses, and fields all seem to be moving past, while the coach stands still; but just the reverse happens in crossing one of these bridges; for the bridge seems to be carried along sideways, while the boiling river appears to stand still."

1: Cunningham G-3 (1846-47) 1854 AJ4 W. Tibetans AJ4

ment has in some respects been a very decided benefit; for although they may now pay *directly* a larger amount than formerly to the state, yet indirectly they pay a less sum, as there is now only *one* duty throughout the country, in place of the numerous charges which were formerly exacted by all the district *Kahlons* and petty *Gyalpos*. They have also the advantage of excellent roads, which is a benefit duly appreciated by a people whose principal means of livelihood are derived from the transport of merchandise. For these good roads, as well as for the almost complete extinction of theft, the Ladákis are indebted to the active zeal of Zoráwar Sing and his successors. Such are some of the advantages which have resulted from the conquest of the country by an energetic people.

VI.—POSTAL ESTABLISHMENT.

The postal arrangements throughout Ladák are simple and effective; but the transmission is generally slow. The *Goba* of each village is bound to furnish a courier to carry the post from his own to the next village on the road. Along the high-roads the couriers are all horsemen, *Tázampa*,* and the post is carried at the rate of from twenty to thirty-five miles a day. The former is the usual rate; the latter is the express rate when any government business is urgent. Thus letters sent from Kashmir usually reach Lé, a distance of 220 miles, in ten days; but when the despatch is urgent, it generally reaches in six days.

All officers of government make use of the village couriers for the conveyance of orders or intelligence;

* *rTa-zam-pa*, "horse-bridge."

[40]EXCOMMUNICATE TO--khioo ne ton ches literally, "to eject from the flock." For offences against religion, Buddhists may be excommunicated by the abbot or "hlóbon" for a longer or shorter period. The offender gives a goat or other offering, and is then received back into the fold. The giving of such penitential offerings is called "SHakspa cho ches." 688 779

EXORCISE TO--rdud (or drey or hlandrey) ton ches. There are two ways of exorcising evil spirits, or driving away sickness. One way is for the Láma to come into the room where the evil spirit is, and, while reading prayers, etc., to strike the air with his "dorjey phurba" or "magic dagger", thus killing or driving out the demon. The other way is to make a clay figure, and then by means of prayers, etc., to cause the evil spirit, or demon of sickness, to take up his abode in this figure which is then, amid much hissing and shouting, taken out of doors and destroyed. 755

[42]FARM--There are no farms in Ladák, the land is cultivated by peasant proprietors who, however, have to pay a land tax to the Kashmir Durbar. Each holding is termed a "zhing" or "zhing kháng" and the holder is termed "zhingrdak." For further particulars see under heading "Entail." 423 241 651

FATHER--ábá or respectfully yap the eldest father, ágoo the younger fathers. Polyandry is almost universal among the Buddhists of Ladák. The eldest brother marries a wife and the younger brothers share her with him. It is usual for as many as three brothers to thus live together, if there are more than three brothers, some of them leave the house on their own account. All children born are considered the children of the eldest brother, but a child speaking of its "fathers" would call the eldest father "ábá" or "ábá chhenmo," the middle one "ába parma," and the young one "ába chhungan." The younger fathers may also be termed ágoo. The actual father is the "ába ngótok." 601 595 [851]

[43]FERRY--raps or chhocraps a ford, nái or toochhung a ferry boat. There are only two ferry boats in Ladák, the one is at the Shyok, crossing between Khardong and Tsáti, and the other is at the Shyok crossing at the north base of the Sasseer Pass. 505 491

6: Gazetteer G-5 (ca. 1840-1883) 1883-4 AJ4 W. Tibetans AJ4

of the mountains that bound the river, that at any day such a disaster may again occur."

The Bhága, rising on the north-west slopes of the Bára Lácha pass, has a course of 65 miles to Tándi, and an average fall of 125 feet per mile. For 30 miles, the valley resembles that of the Chandra, but in its lower part is rich in cultivation, large tracts of level and arable land lying between the mountains and the river. The banks of the stream itself are steep and rocky. It is in this valley, some five miles from Tándi, that Keylang, the principal village of Láhaul, is situated. The Chandra-Bhága, or Chenáb, after the junction of its two heads, continues to flow north-west with a fall of about 30 feet per mile, until at Tirot, 16 miles below Tándi, it passes into Chamba.

The Chandra and Bhága.

The rivers in Láhaul are crossed by means of suspension bridges of from 50 to 150 feet span, made of thick ropes of twisted birch twigs. Three ropes form the roadway, and two hand-rail ropes hang above, one on either side, and are attached to the roadway by small side ropes, fastened at intervals of a foot or two. The best of these bridges are passable for sheep and goats, and without danger if the sides are wattled in with wicker work and slabs of stone placed on the roadway. In a high wind many of them are dangerous to cross, even to a native of the country. They are called *chúgzam* in Tibetan, and *jhúlá* or *dwá* in Hindí. The proper *jhúlá* is a different kind of bridge, which is not used in Láhaul. It consists of a seat in a loop hanging from a wooden saddle, which rides on a cable of thick grass rope, and is pulled across by a gay line. *Gharárú* is another name for this kind of bridge, which you use in crossing the Satlaj, the U'l and other rivers. Of late years, on the main road from Kúlu to Léh, the Chandra and Bhága rivers have been bridged with *sanga* bridges passable by cattle and horses. The *sanga* is composed of whole trunks of pine or cedar built into embankments on either side of the river in double or triple tiers, each tier projecting further from the embankment and supported by a prop on the end of the tier below. Two long trunks rest on and connect the ends of the highest tiers on either side, and form the roadway.

Bridges in Láhaul.

The uppermost village in Rangloi is Purnia Khoksar, and in Gárá, Dárcha. Both these are about 10,800 feet above the sea; but there are higher villages lower down the valley in Gárá. For instance, Kangser (*i.e.*, the big house), where Wazír Tára Chand lives, has an elevation of 11,345 feet. Mr. Lyall estimates the average elevation of the cultivated or inhabited portion of Láhaul at a little less than 10,000 feet; while General Cunningham puts it at over 11,000. The mean temperature at Kardong in the valley of the Bhága is given in Messrs. Schlagintweit's tables as follows:—

Climate of Láhaul

March	...	46° Fahrenheit.
June	...	59° "
September	...	48° "
December	...	29° "
Year	...	44·9° "

6: Gazetteer G-5 (ca. 1840-1883) 1883-4 AJ4 W. Tibetans AJ4

Chapter I. The District. Rivers.

It joins the Spiti after a course of 45 miles a short distance above Dankar, the principal village of the valley. The width of its bed near its mouth varies from 300 to 800 yards. The greater part of its course is through an uninhabited country, its valley forming no exception to the description given of the other streams which join the Spiti from the south and west. Near the mouth of the valley, however, the country opens, and affords space for cultivation. Here there are eleven villages, the only inhabited spots, not in the valley of the main river itself, in the southern half of Spiti.

Character of the Rivers: Bridges.

Running in deep courses, the sides of which are steep and friable, the water of the Spiti rivers is valueless for purposes of irrigation; and although artificial watering is a necessary condition for the production of a crop, and a plentiful supply of water, most plentiful in the hottest season, passes at his feet, the cultivator has to be content with the meagre supply obtainable from streamlets having their rise in the smaller ravines, some of which run low, or dry completely up before the close of the summer months. The water of the rivers, heavily charged with silt, is turbid and yellow in appearance. The flow is seldom deep, being distributed over broad courses, and often broken up into independent channels. The current, however, is sufficiently rapid to render fording, where not quite impossible, a matter of difficulty and danger; and when the streams are full, the ominus sound may be heard of rolling boulders knocking one against the other. Bridges, on the other hand, are rare, and cannot in any case, except that of the new *sangha* bridge at Rangrig over the Spiti river, be passed by the *yaks* or ponies with which most Spiti men travel. The people therefore are compelled to ford, and lives are frequently lost in consequence. At two points, above Kája and below Lithong, where the main stream is suddenly collected into a narrow channel by ridges of rock, *sanga* bridges have been erected for foot traffic, but the biggest timber in Spiti is too light for the construction of a bridge passable by *yaks* or ponies. Below Máni the river runs in a narrow channel and is crossed in three places by *jhúlá* bridges.

Villages and scenery in Spiti.

On the Spiti the first inhabited spot is Losar twelve miles from the Kanzam pass. From this point downwards villages are frequent, occupying every available corner in the valleys, both of the main streams and of its tributaries from the north. A traveller passing down the Spiti valley would never suspect the existence of villages in these lateral valleys, for the streams which drain them run in deep canons or chasms with precipitous sides cut in the rock, and nothing can be seen but the mouths of these gorges from the main valley. Major Hay, in his account of Spiti, says that the soil is composed of lime and sandstone. It is evident that a river very easily cuts itself a deep channel in this formation, which is only hard so long as it keeps dry; and as very little rain falls, and the snow melts gently, the banks of the cutting remain very perpendicular. Curious examples of this quality of the soil are seen in many places, where the ground has melted away round certain points protected by slabs of slate or shale, leaving the slab high in the air supported by fantastic pillars or arches of the softer formation. One bad result of this peculiarity is that though water for irrigation

[½ i.e., the Pín, a tributary of the Spiti river.—ANALYST.]

6: Gazetteer G-5 (ca. 1840-1883) 1883-4 AJ4 W. Tibetans AJ4

Chapter III, D.

Village Communities and Tenures.

land attached to the village *Lhakang* or temple. They should be considered to be the common property of the village. One of the landholders or other residents cultivates them, and pays a fixed rent which is applied to lighting the temple with lamps, or to the expenses of occasional feasts. Such a tenant can be evicted by a vote of community; sometimes all the landholders unite to cultivate these fields, and the whole produce goes to the temple expenses. Some of these temples are served by a *lámá* nominated by the *zamíndárs*, others by the *zamíndárs* themselves. In many villages there are fields known as *yurving*, or canal land, the produce of which, as in Láhaul, is devoted to a feast at the time of annual canal repairs; these also should be considered the common property of the community. In all villages there are some persons known as *yulfa*, that is, village *dotuls*, who own a house and small field attached which they have reclaimed from the waste with the consent of the village community; some few have no field; but all pay a small fee towards the revenue of the village by way of hearth-tax. They could not be evicted, as the land was given them to induce them to settle permanently in the village, and on that understanding they have built their house and broken up the waste.

Fields excluded from regular household allotment.

The custom with regard to *begár* is much the same as in Láhaul. Ordinary repairs of roads from village to village have been hitherto performed by the *tulfa káng-chimpas*, or regular landholders only; the *káng-chungpás*, *yáng chungpás*, and *dotuls*, have only been called upon to assist on occasion of extraordinary repairs. Mr. Lyall recommended, however, that in future each house, and not each holding, should furnish a man for repairs of roads, as is now the practice in Láhaul. For the duty of carrying letters or travellers' baggage across the passes the regular landholders alone are liable, and a roster or roll of turn of duty is kept up as in Láhaul. A landholder often gets a *dotul* or other dependant to go in his stead, but the latter is at perfect liberty to refuse, and will not go unless handsomely paid.* So, again, the landholders are primarily liable for all carriage of loads from village to village; but when the number of loads is very great, all classes are impressed. In order to have a store in hand from which to meet the demands of travellers for supplies, about a *lákh* of grain is collected from each regular landholders at the commencement of the season; any extra expenses on this or any other common account are met by a rate levied on all regular holdings in Spiti. The rate is uniform, and does not vary with the rates of revenue for different villages. At the end of the season, when all the passes have closed, a meeting is held at Dankar, called the *Talsichemno*, or great tax audit, at which the accounts of collections,

Begár or forced labour in Spiti.

* As an instance of the price paid to a substitute may be given that fixed for the journey from Kibbar, in Spiti, over the Párangla pass, to Rápshu in Ladákh, viz., three rupees cash, two *khal* or about 50lbs barley meal, a large pot of butter, five or six ounces of tea, a pair of boots, the loan of sheep to carry the porter's clothes, food, &c.

13: Heber and Heber D-3 (1914-25) 1926 AJ4 W. Tibetans AJ4

chimneys of its cook-houses look up at you like unblinking owls. To visit the monastery the path leads up to turn abruptly near a series of little dwelling places covering a small hill. Unrelieved by the usual balconies and adornments of village houses, they appear more like stables, but we are informed they are the abodes of the nuns. The *dGonpa* itself is very picturesque and a camera might be busy at each corner, but the dirt and dust are terrible. The Lamas who belong to the red sect, are degraded looking, and the whole atmosphere of the village is evil, as several travellers have noticed. What wonder that below the village we come upon that disinterred Sodom and Gomorrah already mentioned, perhaps more aptly described as a ruinous Gehenna with its twisted sulphurous pillars. So we pass along the high road, meeting the Indus at the suspension bridge just below the village of Kalatse, and keeping it company to Saspola. It was when riding along this piece of road that seven year old Helen asked, as more mountains came into view, peering over their fellows, "Mummy, how did the mountains make theirselves so big?" After a long uninhabited stretch of stony road we note a welcome green patch on the other side, where about three houses find enough cultivatable ground, fed from a falling stream, to support their inmates, and we are told that in winter they send their animals across the frozen river, now wide and rushing, to find what roots they can and to bask in the warmth on the sunny side. As our destination approaches, a crazy-looking cantilever bridge with no side rails crosses the river. Though fairly broad, it spans a high gulf, and it is only certain local ponies who are used to it, whom one can dare to take over. Fortunately it is not on the high road, and we may pass on in peace of mind.

The following march ascends a *rong*, which may be defined as a pass "which goes up, but not down," a narrow defile which opens out eventually on to a broad plain, whence the snow crests surrounding the long broad Indus valley in the

13: Heber and Heber D-3 (1914-25) 1926 AJ4 W. Tibetans AJ4

CHAPTER VII

Over Many Passes

HAVING seen the high road to Leh, let us take a trip off the beaten track, along a much less prosaic road, for it is much more thrilling never to know what surprises lie just round the next corner. Towards the end of the march, however, there often seem to be endless " next corners " before the welcome sight of tent or dak-bungalow greets the eyes, with its promise of tea and a nap, the value of which are perhaps best realized after a hot march. Thus round such a corner may come into view the most ricketty of bridges sometimes made only of twigs and spanning a rushing river. Where the stream is smaller, not even this bridge is provided, and the only way across is to ford, which is no easy matter when the bed is not smooth but formed of huge boulders, so that one moment the pony is high up on a rock, the next plunges deep down between the stones. Then, too the boom boom of the swifter torrents filling one's ears inspires an additional fear of the onrush of these stones and smaller boulders which may catch the ponies' legs and break them. At times the road may lead along the bottom of a valley over the most stony of pathways imaginable, and with the overhanging rocks so low that man must " stoop to conquer," and even the ponies' saddles occasionally need to be shed and loads dropped to get underneath. Again, having climbed up a high pass there bursts on the view a panorama that defies description in its immensity and grandeur of upheaval. Moreover in these

13: Heber and Heber D-3 (1914-25) 1926 AJ4 W. Tibetans AJ4

stick on a heavy load, he calls upon "dGonmchog Sum" (the three Gods) to witness that this is not the stick of his choice; but his neighbour's. Spitti's method is far superior, for there the dice settles the matter.

Another day's journey brings us to the capital of the province, but before reaching this we have another type of bridge to cross, this time made of rope. From this place onwards we saw a good many of these, so it may be well to describe one. A prominent rock from which to sling the ropes, is selected on either side of the river. These ropes are made of the twigs of birch or poplar, plaited together. Four such ropes tied together constitute the actual pathway, just broad enough to accommodate a boot. On either side is a rail of the same material, connected by similar strands to the footway, and at each end the latter and the rails are wound and tied round beams, kept in position by large pieces of rock. Often, of course, pieces of this bridge completely disappear, but it is not till someone falls through and ends his present incarnation, that the Ladaki considers there is an indication for repairs to be undertaken. To cross this bridge we first mount the cliff over which its end is swung, then lean well forward to catch hold of one rail with each hand, and place the foot gingerly on the footway. It is impossible to grasp the whole handrail, for it is far too thick, and so rough that it may tear the hands. The bridge sags in the centre, so the first half descends at rather a steep angle, which does not make matters easier, for after about ten paces one cannot help catching sight of the swirling river some hundred feet below. Towards the middle the bridge begins to sway, as a slight wind is blowing, but there can be no turning back now; moreover the worst half is over, for from the centre the ascent to the further side begins. Looking back, we find that even our Ladaki cook has lost his nerve and will not venture. The prospect is bad,—no cook, no dinner. But the problem is soon solved, for a local man hoists him up and soon takes him over

13: Heber and Heber D-3 (1914-25) 1926 AJ4 W. Tibetans AJ4

pick-a-pack. To the men of these parts their bridges offer no thrills; they often carry cattle over on their backs, first taking the precaution of tying their legs. Some time after we had reached camp, our other two servants came in and told us of their experiences at that bridge. "Are you afraid?" said one. "No, not a bit," replied his comrade, while in sheer fright the tears chased one another down his cheeks. However, one soon gets quite blasé about these bridges, and I crossed my fourth with a light heart. But how do the ponies fare? They have to be relieved of their loads, which men carry over the bridge and they themselves must swim the torrent. Our own Mongolian pony was shown a horse on the further side, hoping that he would think it had arrived safely and would follow its good example, but he had to be driven in several times with much shouting and raising of arms before he would venture across, and the sturdy animal was quite out of breath on arriving at the other bank.

At Padum a day's rest was decreed, not only from marching, but also to extract fourteen cataracts, which were awaiting operation. The next day on again, until finally we reached the Shingkung La, the Pass which divides Zankskar from Lahoul, and which took us four days to cross. Going to the foot of the Pass on the first day, we noticed some peculiar huts on the opposite side of the river which proved to be dwellings, built of yaks' dung. During the summer, when the yaks are allowed to graze the hillsides, their shepherds first build low walls of stone, then bring the plaques of dung, which they collect each day, to build a slanting roof, of which each superimposed layer overlaps slightly inwards. When winter comes, the yaks are driven back into the village, and the collections of dung taken home for the winter fuel.

Having reached the top of the Pass, a most wonderful view is unfolded. To right and left rise glorious peaks covered with glittering snowfields or glaciers, while our path itself lies across an avalanche, though it is difficult to realize this,

24:Peter E-5 (1938)1963 AJ4 West Tibetans AJ4
Lahul

exchange local products for salt, borax and wool (including *pashmina*) with Tibetan traders. This merchandise they export to Kulu, again on the backs of their flocks, returning in the same way with grain for the winter. During November, the sheep are once again driven down to the lower Himalayan foothills, where they remain until the spring for pasturage. Many Lahulis find work of a menial kind in the plains during the winter months, especially in forestry.

The only time of the year when crops can be grown in Lahul is from May to November. The rest of the year, the snow lies thick on the ground and no cultivation is possible. The population of the country lives off only 5% of the total area, the rest being waste land unfit for agriculture. The water supply, in spite of the scanty rainfall, is made ample from glaciers and snow drifts, and the soil itself is extraordinarily fertile. The result is that crops are grown with amazing regularity and there has never been a famine in this part of India as long as anyone can remember.

The main food crops are barley, buckwheat and wheat – very much the same as they are in Tibet proper. Peas, potatoes, and grass to make hay for the cattle are also grown, and apple and plum trees produce a good harvest of fruit. Cash crops consist exclusively of *kut* or rusta (*Ru-s Ta*) (*Inula Helenium*), a leguminous plant the roots of which are used to make aromatic burning stocks or *joss-sticks*,[1] much in demand in Buddhist and other temples throughout countries of Chinese culture.

The men in Lahul plough and sow grain. The women weed the fields and collect the harvest. The men then thresh the crops or tread them by foot and with animals, winnowing the grain and storing the latter for the winter in their houses.

The domestic animals of Lahul are the *dzo* (a cross between a yak and a cow), sheep, goats, ponies and donkeys. There were no motorable roads at the time of my visit, but I understand that the Indian army is about to build a track passable for jeeps, which will enable them to reach Ladak from the south.

6. FIELD-WORK RESEARCH ON POLYANDRY IN LAHUL

If I have described the background of Lahul society at some length, it is because I believe this to have considerable bearing on the understanding of polyandry and on the reasons for its existence among the people of Tibetan affinity in the Himalayas. It is to be noticed that only those

[1] *Joss* = from the Portuguese *Dios*, God, hence "God-sticks".

1: Drew G-3 (1862-1872) 1875 AV1 Kashmir
W. Tibetans AV4

Shargol is the first village where there is a Buddhist monastery*; it is a small monastery, with but a few Lāmās, attached to the one at Mulbek farther on. We thus see that we are reaching the country of the Buddhists; the people of Shargol are nearly all of that faith, though for some way farther there is a mixture of Muhammadan Baltīs.

In the next march we pass Mulbek (also called Mulbe) and see the monastery, one of some size, and by the road-side a large idol carved in the rock, and then we rise to the easy Pass called Nāmika Lā,† 13,000 feet, a depression in soft (shaly) rock between mountains of limestone. A very easy descent brings us down to a stream that flows direct to the Indus; turning to the right we follow the valley of this stream upwards, and in a few miles we come to Kharbū, a Bhot‡ village, which makes another stage.

Thence we continue up the same valley: the mountains on the south of us are high mountains of limestone, which rock makes the chief part of the very lofty ridge beyond. Keeping on towards the east, we rise to a Pass of very similar character to the last, called Fotū Lā; it is 13,400 feet high; the ground is smooth, being composed of shale, but close by, on the south, are the rocky limestone hills; a gentle slope for 2000 feet down a valley that is comparatively open, brings us to Lāmāyūrū.

At Lāmāyūrū we are well among the Buddhists or Bhots. Here is a large monastery built on the summit of cliffs which are partly rocky and partly of alluvial matter; some portions of it are very curiously built on timbers placed across chasms, or joining ridges or pinnacles of the hardened alluvial gravel. The cultivated ground is a narrow strip lying for some length above the sloping valley-bottom. As we continue down, we join the valley of a large stream that flows from Wānla; this is extremely narrow; the path has with difficulty been made along the slope of the hill that rises immediately from the stream; there are cliffs to be passed that have necessitated wooden galleries for the road to go on; this has, however, been constructed with a good deal of skill, and by the

* The word for monastery in the Ladākhī language is *Gonpā*.

† In the Ladākhī language *Lā* means Pass.

‡ The word *Bhot* means Buddhist, or perhaps, more particularly, Buddhist Tibetan. The Ladākhīs are called Bhot both by themselves and their neighbours.

1: Drew G-3 (1862-1872) 1875 AV1 Kashmir
W. Tibetans AJV

491 plan of crossing the stream three times, by wooden bridges, we
133* pass the difficulties and find our way to the valley of the Indus itself, and, after another mile or two and after crossing the river, to the village and halting-place of Khalsi.

KHALSI TO LEH: FOUR MARCHES.

491 The Indus is spanned by a wooden bridge where rocks narrow
712 it up to a width of 60 or 70 feet only. The bridge is com-
361 manded by a small fort on the higher bank; the path from the
241 bridge, indeed, is led along the covered way half round the fort. The village of Khalsi is on a plateau about 250 feet above the river; there is here a long strip of cultivated land watered from a side-stream; crops and fruit-trees grow on it well, and even luxuriantly; walnuts and apricots ripen, though the height above the sea is something over 10,000 feet.

133* From this place upwards, to near Leh, the Indus Valley has one character. The river flows either between rocks or against alluvial cliffs, according to whether the mountain spurs reach the water or strips of alluvium-terrace intervene. The hills that are
[361] seen are not very lofty; all are bare and extremely dry. The
[241] only green visible is on those spots where the streams from the mountains on the north-east are brought on to the alluvial plateaus and enable the ground to be tilled; there villages have been formed, and we see the verdure of corn-fields and of orchards, or rather of the lines of fruit-trees that have been planted along the watercourses that skirt the little fields.

487 For the next three days' journey there are two routes that may be taken; they unite again one march short of Leh. The first is along the valley, keeping as near to the river as the ground will allow; the other is a higher route along a series of plateaus behind the former; it is this latter that we choose; the valley itself will be again spoken of in a later chapter.

133* After continuing for a few miles in the immediate Indus Valley,
361 we turn up a ravine to the left, and, rising some 1500 feet, we get on to a high plain between an outer, low, range of hills and the

2: Gervis T-3 (no date) 1954 AV1 Kashmir
W. Tibetans AJ 4

497 morning so that we reached the summit with the dawn. There
133 the wind was bitterly cold; we followed the lower track, for the road along the face of the cliff was impossible.

The Tibetan name for the pass is Zoji La; this was the first time that we discovered that most of the places from there on had two names, a Kashmiri one and a Tibetan one. Unfortunately the map seemed to have mixed them up, probably using the best known, but we did not always strike men of the country who recognised them.

[485] Once over the pass the country changes completely; there is already a Tibetan atmosphere in the air. Going down the other side there are numerous little dak huts built by the roadside for the use of those who chance the journey too late and get caught by the weather.

361 We came upon what we at first imagined would be the start of
136 a village, but found it to consist of a house or two, a telegraph post and a rest house. At many places tracks led off, some to lone, distant "farms", some to parts which were known to be good for shikar, for game is plentiful for the sportsman in parts of Ladakh. It is the home of the ibex and the markhor; both are of the wild goat family; there are wild sheep and kiang—sandy red, wild asses with dark manes and standing about twelve hands high—which are impossible to break; then there are red bear, snow leopard and in parts wolves are to be found; antelope and gazelle are common as are the reddish-brown marmot.

● 491 Here and there places had been marked on the Srinagar-printed map as the spot where a bridge would be found over the river, but there was no sign of it, probably the floods of the last season had carried it away, and we had to ford the waters; then on closer examination of the map we noticed a mark at the spot we had selected and decided that the printer had forgotten to make up his letterpress to include it in the key, or perhaps we were credited with enough common sense to know.

485 The first night we reached a rest house, and were there only just in time, for a quarter of an hour later a large party of men from Leh arrived; a few remained to sleep under the verandahs
515 outside—the stench of bodies was overpowering. I have been assured that the men of Ladakh are bathed three times only in their lives, when they are born, when they marry and when they

2: Gervis T-3 (no date) 1954 AV1 Kashmir A-51

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133 would have been considered a complete failure, but he assured
241 me that all were agreed that he was in for a record crop.

Generally the way is bare and barren, yet with stores in the
● 491 pony packs and the knowledge that one does not have to live there, it is grand, at times beautiful, in a rugged way; the road leads along the face of a precipice at one time, then changes to sandy banks, next across the only suspension bridge I felt safe in passing over, then ascending—we had until that time come slowly down—and on turning a spur of the mountain, we entered Ladakh, Kargil being the first habitation within its borders.

361 Kargil is quite an extensive place, with villages scattered on either side of the Suru river, and many miles of ground which in the spring is under water from the melting snows, bringing down earth from the mountains, this being made into fields during the summer and autumn.

342 The walls of the low-built houses are made of mud and stones mixed together, the finish is very crude; they look more like cow-sheds than houses. It seemed to be a land of women; they
462 were everywhere, round the houses, in the fields, coming down the hillsides with great bundles of sticks on their heads. It seems that the men leave their womenfolk there whilst they go either up to Leh or down to Srinagar with goods, or else hire themselves out as labourers. The Kargil man is also considered quite a good shikari and is engaged as such by shooting parties.

361 Kargil is the capital of Purik, a province in which most of the
[779] inhabitants are Ladakhis who have become Muslims. Beyond this town the people are Buddhists; their dress, customs and ways are so different from those seen before that there awakens a new interest in the journey.

After first passing over the plateau, we found ourselves entering a long ravine which gradually contracts until one wonders if there is any exit from it, the scenery is even more grand with fantastically shaped crags cut out of the brilliant and gloriously coloured sandstone. There are a few tiny hamlets which cluster round the rare patches of greenery which were like giant raindrops that had fallen on an unsympathetic, barren land of hard rocks and sleeping sands moved there by the winds at their will.

2: Gervis T-3 (no date) 1954 AV1 Kashmir
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itself; the castle fort surmounting them must have been almost impossible to get at other than by alpine ropes. 361

The day following, we had our highest pass to cross and the easiest of them all. This was Fotu La at a height of thirteen thousand, four hundred feet. I had gone on, for I had seen ibex ahead—these are goat-like animals with coats varying in colour from cream to chocolate. On the summit I waited for the rest of the party while I admired the magnificent view, and watched them climbing up, so very slowly. Not until then did I appreciate the height we had reached and how it affected one by slackening movements. [133] [136]

From there it was a downhill road two thousand feet to Lamayaru along a watercourse tight in between gloriously coloured cliffs of most unusual shape; later we came on a valley with a stony path lined by prayer walls and dozens of chortens, the village being at the far end with a most interesting monastery built on the low hills above it.

The road on is along the bed of a narrow ravine, so narrow, with overhanging cliffs in places and the swift stream close on the other side, that one is forced to cross and recross almost the whole way. At the far end there is a bridge guarded by an old Dorga fort. Lamayaru has towering above it the ancient castle of Bragnag, built by King Naglug and dating back to A.D. 1150. 491 ● 172

The great Buddhist monastery here is an astonishing place. It seems to consist of an enormous conglomeration of buildings, some of which might be carved out of the hill. There are narrow passages, steep staircases and unprotected ramparts; in parts there are tiny cells, in others large chapels with high-up windows and low benches; little recesses are cut in the walls, presumably for books. In one of these chapels there is a great image of Chubrezig which must be ten or twelve feet high; its background is a large circular plaque almost as high. The image has eleven heads, one on each side of that which is facing, and the others piled on top of them: it has a thousand hands spread out tier upon tier around the plaque, one of the larger pairs being held in prayer, another pair holding a rosary in one hand and a jewel in the other. 346 778

And from the roof of practically every house which sits at the foot of the hill, rag prayer flags fly, sending prayers to heaven, 788